

CLAIMS

Therefore, having thus described the invention, at least the following is claimed:

1 1. A unified digital subscriber line (DSL) transceiver, comprising:
2 a transmit circuit coupled to a line driver/transformer circuit ; and
3 a receive circuit coupled to the line driver/transformer circuit, the receive circuit
4 comprising a switching circuit, the switching circuit enabling operation of the DSL
5 transceiver for DSL applications.

1 2. The unified DSL transceiver of claim 1, wherein the DSL applications
2 comprise symmetric DSL (SDSL) applications, and asymmetric DSL (ADSL)
3 applications.

1 3. The unified DSL transceiver of claim 2, wherein the SDSL applications
2 are selected from a group consisting of integrated services digital network (ISDN), ISDN
3 DSL (IDSL), high-bit-rate DSL (HDSL), HDSL2 and single-pair high-bit-rate DSL
4 (SHDSL) applications.

1 4. The unified DSL transceiver of claim 2, wherein the ADSL applications
2 are selected from a group consisting of ADSL over plain old telephone service (POTS)
3 applications, and ADSL over integrated services digital network (ISDN) applications.
4

1 5. The unified DSL transceiver of claim 1, wherein the switching circuit
2 comprises at least one switch.

1 6. The unified DSL transceiver of claim 1, wherein a plain old telephone
2 service/integrated services digital network (POTS/ISDN) splitter is coupled to the line
3 driver/transformer circuit.

1 7. The unified DSL transceiver of claim 6, wherein the POTS/ISDN splitter
2 comprises:

3 a POTS/ISDN low pass filter for filtering asymmetric DSL (ADSL) signals that
4 pass through the unified DSL transceiver; and

5 a highpass filter for filtering POTS and ISDN signals that pass through the unified
6 DSL transceiver.

1 8. The unified DSL transceiver of claim 1, wherein a transmit filter circuit is
2 coupled to the transmit circuit for filtering undesirable components in asymmetric DSL
3 (ADSL) signals that pass through the unified DSL transceiver, the transmit filter circuit
4 coupled to the transmit circuit for bypassing symmetric DSL (SDSL) signals that pass
5 through the unified DSL transceiver.

1 9. The unified DSL transceiver of claim 8, wherein the transmit filter circuit
2 further comprises a transmit (TX) filter for filtering the undesirable components in the
3 ADSL signals that pass through the unified DSL transceiver.

1 10. The unified DSL transceiver of claim 1, wherein a receive filter circuit is
2 coupled to the receive circuit for filtering undesirable components in asymmetric DSL
3 (ADSL) signals that pass through the unified DSL transceiver, the receive filter circuit
4 coupled to the receive circuit for bypassing symmetric DSL (SDSL) signals that pass
5 through the unified DSL transceiver.

1 11. The unified DSL transceiver of claim 10, wherein the receive filter circuit
2 comprises a receive (RX) filter for filtering the undesirable components in the ADSL
3 signals that pass through the unified DSL transceiver.

1 12. The unified DSL transceiver of claim 1, wherein a transmit filter circuit is
2 coupled to the transmit circuit for filtering undesirable components in asymmetric DSL
3 (ADSL) signals that pass through the unified DSL transceiver, the transmit filter circuit

1 coupled to the transmit circuit for bypassing symmetric DSL (SDSL) signals that pass
2 through the unified DSL transceiver; and

3 a receive filter circuit is coupled to the receive circuit for filtering the undesirable
4 components in the ADSL signals that pass through the unified DSL transceiver, the
5 receive filter circuit coupled to the receive circuit for bypassing the SDSL signals that
6 pass through the unified DSL transceiver .

1 13. A method for using a single transceiver for digital subscriber line (DSL)
2 applications, comprising the steps of:

3 receiving a signal into a line driver/transformer circuit , the line driver/transformer
4 circuit coupled to a transmit circuit;

5 propagating the received signal to a receive circuit, the receive circuit comprising
6 of a switching circuit; and

7 configuring the switching circuit based on DSL applications.

1 14. The method of claim 13 for using a single transceiver for DSL
2 applications, wherein the step of configuring the switching circuit based on DSL
3 applications comprises the step of:

4 opening and closing switches, which are located in the switching circuit, in a first
5 manner if the unified DSL transceiver is used for asymmetric DSL over plain old
6 telephone service (ADSL over POTS) applications.

1 15. The method of claim 14 for using a single transceiver for DSL
2 applications, wherein the step of configuring the switching circuit based on DSL
3 applications comprises the step of:

4 opening and closing the switches in a second manner if the unified DSL
5 transceiver is used for symmetric DSL (SDSL) applications.

16. The method of claim 15 for using a single transceiver for DSL applications, wherein the step of configuring the switching circuit based on DSL applications comprises the step of:

opening and closing the switches in a third manner if the unified DSL transceiver is used for ADSL over integrated services digital network (ISDN) applications.

17. A method for using a single transceiver for digital subscriber line (DSL) applications, comprising the steps of:

transmitting a signal from a transmit circuit to a line driver/transformer circuit ;
 propagating the signal from the line driver/transformer circuit, the line driver/transformer circuit coupled to a receive circuit, the receive circuit comprising of a switching circuit; and
 configuring the switching circuit based on DSL applications.

18. A unified DSL transceiver comprising:
 means for receiving a signal into a line driver/transformer circuit, the line driver/transformer circuit coupled to a transmit circuit;
 means for propagating the received signal to a receive circuit, the receive circuit comprising of a switching circuit; and
 means for configuring the switching circuit based on DSL applications.

19. The unified DSL transceiver of claim 18, wherein the means for configuring the switching circuit based on DSL applications further comprises:
 means for opening and closing switches, which are located in the switching circuit, in a first manner if the unified DSL transceiver is used for asymmetric DSL over plain old telephone service (ADSL over POTS) applications.

20. A unified digital subscriber line (DSL) transceiver comprising:
 means for transmitting a signal from a transmit circuit to a line driver/transformer circuit ;

means for propagating the signal from the line driver/transformer circuit, the line driver/transformer circuit coupled to a receive circuit, the receive circuit comprising of a switching circuit; and

means for configuring the switching circuit based on DSL applications.

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